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10/591,216

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Eran Dotan

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EXAMINER

NGUYEN, PHUNG HOANG JOSEPH

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/591,216	<b>Applicant(s)</b> DOTAN ET AL.	
	<b>Examiner</b> PHUNG-HOANG J. NGUYEN	<b>Art Unit</b> 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 4/5/2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mukherjee et al. (US Pub 2003/0012162) further in view of Wang et al. (US Pat 6,603,761) further in view of Slog (US Pub 2001/0012779) and/or Ho et al (US Pat 6,408,181).**

Claims 1 and 16, Mukherjee teaches a communication apparatus for integrating a packet network with a circuit-switched telephone network (figs. 1, and 4), the apparatus comprising:

a packet network interface, for coupling to a packet switch in a packet network (*IP network 12 of fig. 3, pars. 0023, 0024 and 0030*).

a telephone network interface, for coupling to a node in a circuit-switched telephone network (*Local Exchange 29 and PSTN 27 of fig. 4, pars. 0023, 0024 and 0037*); and

a fixed mobile convergence gateway (FMC) (*Radio Network Server 42 of fig. 7*), coupled between the packet network (*IP network 12*) and telephone network interfaces (*telephone network 14 of fig. 1*) and operative to emulate (*par. 0030*) a mobile switching

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center (MSC) (*par. 0025 and 0028 shows the MSC 32 of the PLMN network 24*) and a visitor location register (VLR) (*VLR 35 of fig. 2*) in the circuit-switched telephone network (*PSTN network 14 of fig. 4*).

register subscribers in the packet network for telephone service in the circuit-switched telephone network (*Assuming that mobile terminal 26(d) is to be allowed access and registration procedures are completed, mobile terminal 26(d) is provided services by the IP network 12 as follows. The TA 34 converts between wireless protocol, in this case GSM, from the wireless terminal 26(d), and the appropriate IP protocol, for example H.323, messages to gatekeeper 22, [0035]*)

sending an Update Location message to a Home Location Registry (HLR) in the circuit-switched telephone network (*Referring to FIG. 2A, registration, e.g. location update procedure, is shown. A mobile terminal 26(n) contacts the TA 34. The TA 34, in turn, accesses the appropriate PLMN HLR 33 using the gatekeeper 22 and gateway 16. Registration of the mobile terminal 26(n) is thus completed in the TA 34 service area 10, [0034]*);

Mukherjee does not explicitly teach assigning telephone numbers in the circuit-switched telephone network to user terminals in the packet network and to connect telephone calls, using the assigned telephone numbers, between telephones in the circuit-switched network and the user terminals.

Wang teaches assigning telephone numbers in the circuit-switched telephone network to user terminals (*specifically, col. 6, lines 12-19, 53-58 and col. 8, lines 4-11*)

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for the purpose of integrating the proper pieces of wireless and wireline networks and secure communication, using IP networks and protocols as an alternative to the existing telephony-based approach (*see Abstract*).

Therefore it would have been obvious to the ordinary skilled artisan at the time of the invention was made to incorporate the teaching of Wang into the teaching of Mukherjee for the purpose of enhancing greater roaming quality for the caller.

While Mukherjee teaches the registration process to update location at the HLR and VLR, Mukherjee, in view of Wang, does not detail the claimed feature of receiving an Insert Subscriber Data (ISD) message from the HLR; sending an ISD result message to the HLR; and receiving an Update Location Result message from the HLR.

While examiner believes that an ordinary artisan by the obviousness would reason that the IDS operation is a detailed activity of updating the location of the subscribers, examiner would like to present:

(I) Skog who details the claimed feature by using the MAP ISD (insert subscriber data) and MAP DSD (delete subscriber data) operation “by invoking the MAP ISD operation, the SDR 115 (or a portion thereof) is sent to the destination VLR. The MAP ISD operation can be invoked as a consequence of, for example, (i) updating location or restoring data and (ii) an alteration or addition of the subscriber data that should be reported to an MSC/VLR associated with the LA in which the MS 110 is located. If the entire subscriber data that the HLR 105 is sending fails to fit within a single Invoke component, then multiple Invoke components may be sent. When the MS 110 is leaving the LA 150 of the MSC/VLR 130, on the other hand, a MAP Delete Subscriber Data

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(DSD) operation 145 may be used to inform the MSC/VLR 130 about withdrawing the subscriber data”, ([0027, 0034, 0035, 0038 and 0039]).

Therefore it would have been obvious to the ordinary skilled artisan at the time of the invention was made to incorporate the teaching of Skog into the teaching of Mukherjee for the purpose of clearly defining that the claimed feature presented is a well known practice in the updating location in the Home and Visitor Location Registration. The purpose of the incorporation is not to seek any modification in coding of software or in developing of new hardware, it is rather reemphasizing the detail of the update operation.

(II) Ho also teaches the claimed feature as he discusses Referring now to FIG. 1B, shows the location update procedure when a mobile terminal moves from the service area of VMSC 121 to that of VMSC 223. When a mobile terminal 8 detects that it is in a new location area (LA), it will send a Location Update (LU) 25 message to the MSC 23 serving that LA through the GSM air channel, BTS 14 and BSC 16. If the mobile terminal 8 remains in the same VMSC 21, the VMSC 21 simply updates its associated VLR 13 indicating the new LA of the mobile terminal 8 and the location update procedure is complete. If the mobile terminal 8 has moved to a new VMSC 23, the VMSC 23 sends an Update Location (UL) 27 message to the HLR 11 of the mobile terminal 8. The HLR 11 updates its record indicating the new VMSC 23 of the mobile terminal 8 and sends an Insert Subscriber Data (ISD) 29 message to this new VMSC 23. This ISD 29 message contains a copy of the mobile terminal's subscriber profile. On receiving this ISD 29 message, the VMSC 23 stores the subscriber profile in its

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associated VLR 13 and sends an ISD ACK 31 message to the HLR 11. The HLR 11 then sends a UL ACK 33 to the VMSC 23. At the same time, the HLR 11 will also send a Cancel Location (CL) 35 message to the previous VMSC 21 of the mobile terminal 8. The previous VMSC 21 then deletes the subscriber profile for the mobile terminal 8 and sends a CL ACK 37 message to the HLR 11. This location update procedure allows the HLR 11 to keep track of the up-to-date VMSC ID of each of its supported mobile terminals, col. 3, line 52 – col. 4, line 11; AND/OR When the mobile terminal moves to another MSC area, the HLR 11 will cancel the cache entry recorded at the GMSC 7. The first call that arrives after an inter-MSC movement will be delivered using call delivery method as shown an in FIG. 3. Thereafter, the method and system of the present invention is used to delivery subsequent calls as shown in FIG. 5. FIG. 6 depicts a detailed block diagram for location update and cache removal in accordance with a preferred embodiment of the present invention. Referring to FIG. 6, when the terminal or mobile subscriber 8 moves to another MSC, it sends a location update request to the new VMSC 70, which then sends an Update Location (UL) 72 message to the HLR 11. The HLR 11 determines the GMSCs that has cache entries for the mobile terminal by table lookup and sends Cancel Cache 74 messages to these GMSCs 7. The Cancel Cache 74 message is a propriety message similar to the Cancel Location message as defined in the GSM standard. The GMSC 7 then deletes the cache 34 entry for the terminal and sends a Cancel Cache ACK 76 message to the HLR 11. The HLR 11 then updates the MSISDN-GMSC mapping table 58 to remove the GMSC 78, BC 38 and MSRN 22 associated with the target terminal 24 and sends an

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ISD 80 message to the new VMSC 70. The new MSC 70 responds by forwarding an ISD ACK 82 message and the HLR 11 sends back an UL ACK 84 message to the new MSC 70, col. 5, lines 42-67.

Therefore it would have been obvious to the ordinary skilled artisan at the time of the invention was made to incorporate the teaching of Ho into the teaching of Mukherjee for the purpose of clearly defining that the claimed feature presented is a well known practice in the updating location in the Home and Visitor Location Registration. The purpose of the incorporation is not to seek any modification in coding of software or in developing of new hardware, it is rather reemphasizing the detail of the update operation.

As to claims 2 and 17, Mukherjee, in view of Wang, teaches the packet network comprises an Internet Protocol (IP) network (IP network 10 and 12 of fig. 1), and wherein the telephone network (PSTN 14) comprises a cellular telephone network (BTS 28 indicates the cellular network; also PLMN 24); see par. 0024 also see claims 1 and 16 above).

As to claim 3 and 18, Mukherjee does not explicitly teach the FMC processor is arranged to **assign** different, first and second telephone numbers to a given user terminal in the packet network, wherein the first telephone number belongs to the cellular telephone network, and the second telephone number belongs to a public switched telephone network (PSTN).

Wang teaches the convergence processor is adapted to assign different, first and second telephone numbers to a given user terminal in the packet network, wherein the



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first telephone number belongs to the cellular telephone network (col. 3, lines 65-66), and the second telephone number belongs to a public switched telephone network (PSTN) (col. 6, lines 12-19).

As to claims 4 and 19, Mukherjee does not explicitly teach the FMC is arranged to assign to the user terminals telephone numbers having a first country code, while the user terminals are located in a country having a different, second country code.

Wang teaches the claimed feature (col. 1, lines 16- 20, col. 6, lines 12-19).

As to claims 5 and 20, Mukherjee does not explicitly teach the packet network interface comprises a session border controller, which is operative to perform Network Address Translation (NAT). The ordinary skilled artisan should however understand that the NAT is inherently a well known art in the packet network (sometimes referred to as network or IP masquerading or a process of modifying network address information) for transmitting the traffic across the networks or devices (*RFC 1918*).

Furthermore, Wang teaches the packet network interface comprises a session border controller, which is operative to perform Network Address Translation (NAT) (*col. 8, lines 4-20 and 44-51*).

As to claim 6, Mukherjee, in view of Wang, teaches the telephone network interface comprises a media gateway (*IP network 12 of fig. 1 has one or more gateways, par. 23*).

As to claim 7, Mukherjee teaches a soft-switch, which is coupled between the packet network and telephone network interfaces and the convergence processor so as

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to convey instructions from the FMC to the packet network add telephone network interfaces regarding handling of the telephone calls to end from the user terminals (*par. 28-29 describes the concepts and practice of soft-switch application. As appreciated by the ordinary skilled artisan, soft switch is a simple device installed in the PSTN network (5ESS system) for connecting calls entirely by means of software application*).

As to claim 8, Mukherjee, in view of Wang, does not explicitly teach the soft-switch is arranged to communicate with the packet network and telephone network interfaces by transmitting and receiving at least one of Session Initiation Protocol (SIP) or and SIP for telephones (SIP-T) packets.

It is obvious and as appreciated by the ordinary skilled artisan that Mukherjee teaches the use of H.323 protocol (*par. 0011, 0023, 0030, 0035, 0038, 0042*) transmitting and receiving signals between the IP network 12 and mobile terminal 26. Replacing H.323 with SIP technique is equally acceptable since both protocols are dealing with signal processing designed for the IP networks.

As to claims 9, 14, 22 and 27, Mukherjee, in view of Wang, teaches the FMC is arranged to receive registration requests from the user terminals and, in response to the registration requests, to register the user terminals in the HLR. (*if the terminal is not previously registered, registration message is sent to HLR 33, par. 33*). Furthermore, Mukherjee teaches for routing information with respect to a call placed from the telephone network to a telephone number that is assigned to a user terminal having a network address (*par. 0023*) in the packet network and, responsively to the request, to

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cause the packet network interface to route the call to the network address of the user terminal (*par. 0028-0029*).

As to claims 10 and 23-24, Mukherjee, in view of Wang, teaches the FMC is arranged to communicate with the HLR in order to determine respective service profiles applicable to the user terminals (*emulate wireless infrastructure, par. 0030. Note that the registration process is to build appropriate profile for specific tasks and service, see the entire document*).

As to claims 11-13 and 26, Mukherjee, in view of Wang, teaches the FMC is arranged, responsively to the service profile (*note that the registration process is to build appropriate profile for specific tasks and service, see the entire document*)., to invoke an Intelligent Network (IN) (*fig. 1*) service in the telephone network that is to be applied to a call (*emulate wireless infrastructure, par. 30*). Furthermore, Mukherjee, in view of Wang, teaches an indication of a request from one of the user terminals to set up a call (*par. 0029*), and responsively to the indication, to cause the telephone network interface to route the call (*MSC 32 seeking routing information, par. 0028*) to a telephone number in the telephone network in accordance with an applicable service profile (*when registered; also par. 0028-0029*).

As to claims 15 and 28, see claims and/or 16 for the teaching on the use MAP to communicate with HLR.

As to claim 21, Mukherjee, in view of Wang, teaches connecting the telephone calls comprises converting media and signaling messages between protocols used

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respectively in the packet and telephone networks (*A Network Access Controller (NAC) 44 is connected to the Radio Network Server (RNS) 42 and is configured to convert signals between a wireless protocol, GSM for example, and IP protocol, such as H.323, for facilitating transmission of the signals between the IP network 12 and the mobile terminal 26, par. 0042*).

As to claim 25, Mukherjee, in view of Wang, teaches communicating with the HLR comprises determining the respective service profiles initially upon registration, and comprising updating one or more of the service profiles thereafter while the user terminals are in operation (*see fig. 2, registration, e.g., location update procedure is shown*).

### ***Response to Arguments***

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this office action. Accordingly, **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHUNG-HOANG J. NGUYEN whose telephone number is (571)270-1949. The examiner can normally be reached on Monday to Thursday, 8:30AM - 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on 571 272 7499. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CURTIS KUNTZ/  
Supervisory Patent Examiner, Art Unit 2614

/Phung-Hoang J Nguyen/  
Examiner, Art Unit 2614

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